

Dimensions of a three-level electrical distribution box on a construction site



Overview

The power distribution from the power input point to the end electrical equipment needs to go through three levels of Powbinet.

Key Takeaways

A three-level construction site distribution box typically consists of a main distribution cabinet, a secondary distribution box, and a final switch/junction box, with dimensions varying based on power requirements but generally ranging from 600–1200 mm in height, 400–800 mm in width, and 250–500 mm in depth. Structure and Levels

Three-level distribution boxes are designed to provide staged protection and organized power distribution on construction sites. The levels include:

- **First Level (Main Distribution Box):** Handles incoming power, usually with bottom-in and bottom-out lines. It contains the main busbar, measuring systems, and primary protection devices. The cabinet is rainproof and suitable for outdoor installation.
- **Second Level (Secondary Distribution Box):** Positioned under the main box, it features inner and outer doors, often spray-painted for durability. It distributes power to multiple circuits and may include additional protection devices.



- Third Level (Final Switch/Junction Box): The lowest level, installed under the secondary box, provides final connections to electrical appliances. It can be fixed or movable and includes leakage protection switches for safety .

Typical Dimensions

While exact sizes depend on manufacturer and site requirements, common dimensions for three-level boxes are approximately:

- Height: 600–1200 mm
- Width: 400–800 mm
- Depth: 250–500 mm These dimensions allow sufficient space for busbars, circuit breakers, wiring, and heat dissipation while maintaining compliance with safety standards .

Material and Protection

- Cabinet Material: Sheet steel or technopolymer with fire-resistant backrest
- Ingress Protection: Typically IP65 or higher for outdoor use
- Impact Resistance: IK08–IK10 depending on the model

Installation Considerations

- Can be wall-mounted or floor-standing depending on site layout
- Ensure adequate clearance in front of the box for door operation and maintenance, generally 3 ft (≈914 mm) deep and 30 in (≈762 mm) wide
- Internal mounting plates should accommodate terminal blocks, relays, and other devices while allowing proper wire routing

Summary

A three-level electrical distribution box on a construction site is a modular, staged system designed for safety, flexibility, and compliance with construction electrical standards. Its dimensions vary with power requirements but generally fall within 600–1200 mm height, 400–800 mm width, and 250–500 mm depth, providing space for all three levels of distribution and protection .

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This document is for preliminary research. Verify specifications against current standards, product documentation and project requirements.

